REMARKS

Prior to the entry of this amendment, Claims 1-8 and 15-17 are pending in the application, with Claims 15-17 having been withdrawn from consideration, and Claims 1, 5 and 6 in independent form. The Examiner objected to the specification. The Examiner rejected Claims 1-8 under 35 U.S.C. §112, first paragraph, as being non-enabling. The Examiner rejected Claims 1-8 under 35 U.S.C. §112, second paragraph, as being indefinite and/or incomplete. The Examiner rejected Claims 1-5 under 35 U.S.C. §101 as being directed to non-statutory subject matter. The Examiner has rejected Claims 1 and 6 under 35 U.S.C. §102(e) as being anticipated by Park et al. (U.S. Patent 6,397,367). The Examiner has rejected Claims 2-5, 7 and 8 under 35 U.S.C. §103(a) as being unpatentable over Park et al. in view of Mousley (U.S. Patent 6,671,851).

Please cancel Claims 4, 8 and 15-17, without prejudice.

The Examiner objected to the specification, and rejected Claims 1-8 under 35 U.S.C. §112, first paragraph, as being non-enabling, both on the grounds that the quasi-complementary turbo-codes (QCTC) are not adequately defined, QCTC corresponds to a sub-code set. Each sub-code set includes a plurality of sub-codes having same code rate, and a plurality of the sub-code sets have the same or different code rates. Furthermore, each QCTC corresponds to one sub-code set, and a plurality of QCTCs have different code rates. A sub-code generator (204) generates coded symbols using a sub-code, and the sub-code is directly transmitted. Further, referring to the detailed description of the present application related to Figure 2, a sub-code represents symbols which are selected from coded symbols from a turbo encoder (201, 203), i.e., information symbols and parity symbols by puncturing and repeating, and the sub-code is directly transmitted. A codeword is generated by combining the sub-codes. (See page 24, line 3.) The transmitted symbols corresponding to the sub-code are determined by puncturing and repeating symbols from the turbo encoder (201, 203). Therefore, the sub-code is represented by the puncturing and repeating matrix which represents a puncturing and repeating pattern. Based on at least the foregoing, withdrawal of the objection to the specification and rejections under 35 U.S.C. §112, first paragraph are respectfully requested.

The Examiner rejected Claims 1-8 under 35 U.S.C. §112, second paragraph, as being indefinite and/or incomplete. In addition to the above definition, Claims 1-3 and 5-7 have been amended to further clarify the claimed subject matter. Based on at least the foregoing, withdrawal of the rejections to Claims 1-8 is respectfully requested.

The Examiner rejected Claims 1-8 under 35 U.S.C. §101 as being directed to non-statutory subject matter. To address these rejections, the preambles of Claims 1, 5 and 6 have been amended to read as follows: "A computer program device readable by a machine, tangibly embodying a program of instructions executable by the machine for ...". Claims 2-4, 7 and 8 have been amended to reflect the amendments to Claims 1, 5 and 6. Based on at least the foregoing, withdrawal of the rejections to Claims 1-8 under 35 U.S.C. §101 is respectfully requested.

The Examiner has rejected Claims 1 and 6 under 35 U.S.C. §102(e) as being anticipated by Park et al. (U.S. Patent 6,397,367). Regarding Claim 1, The Examiner states that Park et al. discloses a rate matcher that generates a first sub-code with a given rate. Park relates to a method for inserting known bits in an input data bit stream at predetermined positions; Park does not disclose that the sub-code set includes sub-codes having an identical code rate, and sub-codes belonging to different sub-code sets have different code rates. The Examiner asserts that Figure 13 of Park et al. discloses certain elements of the claims of the present application. Figure 13 of Park et al. discloses three rate matchers (1304, 1314, 1324) being capable of supporting three different code rates. However, the three rate matchers are for supporting three kinds of data using different data sizes; the rate matchers can be realized by a puncturer or a repeater operating based on a coded user symbol rate. (See col. 10, lines 30-44.) Park et al. does not disclose a plurality of sub-codes having different puncturing and repeating patterns for the sub-code rate having a given code rate. Additionally, the Examiner states that the multiplexer of Park et al. is a device for rearranging sub-code codewords. As a multiplexer, by definition, does not rearrange its input as an output, but merely selects an input, the rejection must be withdrawn. Park discloses that a MUX (1305) multiplexes a rate matched user data symbol and a control data symbol; however, this is completely different from the rearranging operation of the present invention. And further, since the multiplexer does not perform any operation on a set of sub-codes, the rejection must be withdrawn. Still further, the Examiner has not properly cited any

reference to reject that element of Claim 1 that recites, "that is to be used after a sub-code with a predetermined code rate". Based on at least the foregoing, the rejection of Claim 1 must be withdrawn.

Regarding Claim 6, the Examiner states that the multiplexer of Park et al. is a device for rearranging sub-code codewords. As stated above, as a multiplexer, by definition, does not rearrange its input, but merely selects an input, the rejection must be withdrawn. And further, the multiplexer of Park et al. does not perform any operation on a set of sub-codes. Still further, since the Examiner has not properly cited any reference to reject that element of Claim 6 that recites, "storing the rearranged sub-codes" the rejection must be withdrawn. Again, the Examiner asserts that Figure 13 of Park et al. discloses certain elements of the claims of the present application. Figure 13 of Park et al. discloses three rate matchers (1304, 1314, 1324) being capable of supporting three different code rates. However, the three rate matchers are for supporting three kinds of data using different data sizes; the rate matchers can be realized by a puncturer or a repeater operating based on a coded user symbol rate. (See col. 10, lines 30-44.) Park et al. does not disclose a plurality of sub-codes having different puncturing and repeating patterns for the sub-code rate having a given code rate. Therefore the rejection of Claim 6 must be withdrawn. Additionally, the Examiner states that the transmitter of Park et al. discloses the transmitting step of Claim 6. Although the transmitter of Park et al. may perform a transmitting function, it certainly does not perform the step of "transmitting data ***using a sub-code in the selected sub-code set***" as recited in Claim 6. Based on at least the foregoing, the rejection of Claim 6 must be withdrawn.

Based on at least the foregoing arguments and the amendments to Claims 1 and 6, withdrawal of the rejections of independent Claims 1 and 6 is warranted.

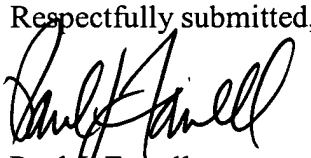
The Examiner has rejected Claims 2-5, 7 and 8 under 35 U.S.C. §103(a) as being unpatentable over Park et al. in view of Mousley (U.S. Patent 6,671,851). The Examiner does not present any rejections of Claims 3, 4, 5, 7 or 8 in the Office Action, and therefore a proper reply is not possible. Also, since the subject matter of Park et al. and the claimed invention were, at the time the claimed invention was made, owned by the same person or subject to an obligation of

assignment to the same person, Park et al. is not a proper reference and any rejections based on Park et al. must be withdrawn. Further the Examiner states at page 8 of the Office Action that these claims will be examined on the merits when the §112 and §101 rejections are removed. Applicants therefore await proper rejections or an allowance of Claims 2-5, 7, and 8.

Independent Claims 1, 5 and 6 are believed to be in condition for allowance. Without conceding the patentability per se of dependent Claims 2, 3 and 7, these are likewise believed to be allowable by virtue of their dependence on their respective amended independent claims. Accordingly, reconsideration and withdrawal of the rejections of dependent Claims 2, 3 and 7 is respectfully requested.

Accordingly, all of the claims pending in the Application, namely, Claims 1-3 and 5-7, are believed to be in condition for allowance. Should the Examiner believe that a telephone conference or personal interview would facilitate resolution of any remaining matters, the Examiner may contact Applicant's attorney at the number given below.

Respectfully submitted,



Paul J. Farrell
Reg. No. 33,494
Attorney for Applicant

DILWORTH & BARRESE
333 Earle Ovington Blvd.
Uniondale, New York 11553
Tel: (516) 228-8484
Fax: (516) 228-8516

PJF/MJM/dr